

**AMENDMENTS TO THE CLAIMS**

✓  
Claims 1-80 (Canceled)

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~~81~~(Currently Amended): A kit for diagnosing infection with a causative agent of Lyme Disease in a human or animal comprising a protein or peptide of claim ~~103~~ ~~104~~.

[ ]  
Claims 82-103 (Canceled)

~~103~~ ~~104~~(Currently Amended): A recombinant or synthetic protein or peptide that reacts binds with antibodies to the causative agent of Lyme Disease in infected humans or animals, said protein or peptide selected from the group consisting of:

- (a) an amino acid sequence of SEQ ID NO: 2;
- (b) an amino acid sequence of SEQ ID NO: 14;
- (c) an amino acid sequence encoded by SEQ ID NO: 3;
- (d) an amino acid sequence encoded by SEQ ID NO: 7;
- (e) an amino acid sequence encoded by SEQ ID NO: 11; and
- (f) an amino acid sequence of a fragment of (a) through (e) of at least five amino acids in length; and
- (g) an amino acid sequence that differs from a sequence of (a) through (f) by up to four codon changes in the nucleic acid sequence encoding the amino acid sequence.

~~104~~ ~~105~~(Currently Amended): The protein or peptide according to claim ~~103~~ ~~104~~, wherein said fragment is at least eight amino acids in length.

*3*  
~~105, 106~~(Currently Amended): The protein or peptide according to claim  
~~103, 104~~, wherein said peptide or protein is coupled to a substrate that immobilizes said peptide or protein.

*4*  
~~106, 107~~(Currently Amended): The protein or peptide according to claim  
~~103, 104~~, wherein wherein said peptide or protein is coupled to a detectable label or signal generating reagent.

*5*  
~~107, 108~~(Currently Amended): The kit according to claim ~~8, 9~~, further comprising at least one of the group consisting of a substrate that immobilizes said peptide or protein, a detectable label, a labeled conjugate, and a signal generating reagent.